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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/821,968 | 04/12/2004 | Hsin-Chang Wu | 2410-0186PUS1 | 3103 |
| 2292 | 7590 | 05/03/2006 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | | UNELUS, ERNEST |
| | | | ART UNIT | PAPER NUMBER |
| | | | | 2187 |

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/821,968 | WU ET AL. |
| | Examiner | Art Unit |
| | Ernest Unelus | 2187 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 April 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. The instant application having Application No. 10/821,968 has a total of 7 claims pending in the application; there are 3 independent claims and 4 dependent claims, all of which are ready for examination by the examiner.

I. INFORMATION CONCERNING OATH/DECLARATION

Oath/Declaration

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

II. INFORMATION CONCERNING DRAWINGS

Drawings

3. The applicant's drawings submitted are acceptable for examination purposes.

III. REJECTIONS NOT BASED ON PRIOR Art

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7 rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

6. The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly

and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited. For example, in claim one, line number 7, there should not have been a period after the word "signals". This problem also occurs in claims 4, 6, and 7.

7. The claims are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, claim 1, line number 5, stated "to the pure hardware". It is unclear to what is "the" is referring to. The subject of "the" were not mention previously in the claim.

8. The claims are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, claim 1, lines number 3 and 8, stated "the said". This is unclear. The applicant should disclose "the multiple...,the pure pure..., the micro-controller." or "to'said pure... multiple...., micro-controller."

IV. REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1-2, and 4-5** are rejected under 35 U.S.C. 102(b) as being anticipated by Falik et al. (US pat. 5,964,853).

11. As per **claim 1**, Falik discloses “a keyboard controller (**controller 100, col. 1, line 17**), comprising; a computer host (**107**) interface receiving multiple signals (**see fig. 1**); a command filtering circuitry (**101**) parsing the said multiple signals and then processing the signals to the pure hardware circuitry (**105**) or a micro-controller unit (**102**); and an interface circuitry (**103**) processing the received signals (**see fig. 1**); wherein said keyboard controller (**100**) can parse multiple signals (**col. 3, lines 48-55 discloses the processor 101 detect incoming signals from host processor and make a decision. It decided if the message byte is a command byte or a data byte.** Then, it processes the received signals to the said pure hardware circuitry or to the said micro-controller unit for achieving flexibility and extension ability (**see fig. 1, also, col. 3, lines 48-55 discloses the processor 101 detect incoming signals from host processor and make a decision. It decided if the message byte is a command byte or a data byte**

12. As per **claim 2**, Falik discloses the keyboard controller according to claim 1[**see claim one above**], wherein the multiple signals of the said keyboard controller can be multiple data or commands (**col. 3, lines 5 and 52**).

13. As per claim 4, Falik discloses wherein the command filtering circuitry (101) of the said keyboard controller can have multiple controlled switches (col. 3, lines 52-54 discloses that “If the message byte is a command byte, then the process continues at step 206 (*first switch*), where it is determined if the command byte is D1 or FF (*second switch*) “. It uses different switches to process signal analysis and parsing works (col. 3, lines 52-54 discloses that “If the message byte is a command byte, then the process continues at step 206 (*first switch*), where it is determined if the command byte is D1 or FF (*second switch*) “.

14. As per claim 5, Falik discloses wherein the micro-controller unit of the said keyboard controller can be a firmware (Falik discloses firmware 102 in fig. 1, which is also known as a micro-controller as disclose by the applicant and prior art.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Falik et al. (US pat. 5,964,853) in view of Thayer et al. (us pat. 5,381,530).

16. As per claim 3, Falik discloses “a keyboard controller according to claim 1,” [See

rejection to claim 1 above], including an interface circuitry, but fails to disclose expressly "wherein the interface circuitry of the said keyboard controller can be 64h or 60h of input/output ports.

Thayer discloses keyboard controller having a 64h or 60h of input/output ports (col. 7, lines 12-25).

Falik and Thayer are analogous art because they are from the same field of endeavor of keyboard controller for processing commands/data.

In view of such teaching, at the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Falik's keyboard controller, which include the interface circuitry with Thayer's keyboard controller to include a 64h or 60h of input/output ports to process signals.

The motivation for doing so would have been because Thayer teaches that **separating the incoming signals reduce latency in handling command/data, as disclosed (see col. 5, lines 23 and 24).**

Therefore, it would have been obvious to modify Falik with Thayer for the benefit of creating a keyboard controller used to reduce latency in handling command/data to obtain the invention as specified in claim 3.

17. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falik et al. (US pat. 5,964,853).

18. As per **claim 6**, Falik discloses a method for controlling a keyboard controller (100) comprising the steps of: receiving the signals of the assigned PS/2 controller from

the computer host to the host interface (107) of the said keyboard controller (col. 1, lines 40-59 discloses that the PS/2 protocol has a controller to re-initiated dada from the beginning). Then, transferring the signals to the command filtering circuitry (col. 1, lines 40-59 discloses that the PS/2 protocol has a controller to re-initiated dada from the beginning); parsing the signals of the host interface (107) (col. 3, lines 52-54 discloses that “If the message byte is a command byte, then the process continues at step 206, where it is determined if the command byte is D1 or FF. Sending the processed signals to the interface circuitry (103) after processing the signal by the pure hardware circuitry (105) and the micro-controller unit (102); and sending the signal to the PS/2 controller according to the command of the computer host by the said interface circuitry (col. 1, lines 40-59 discloses that the PS/2 protocol has a controller to re-initiated dada from the beginning). The said keyboard controller using a command filter circuit (101) parses the signal (col. 3, lines 52-54 discloses that “If the message byte is a command byte, then the process continues at step 206, where it is determined if the command byte is D1 or FF, see fig. 1). Then, the signal would be sent to the said pure hardware circuitry or to the said micro-controller unit for achieving a fast processing speed in between a computer host and a PS/2 controller (col. 1, lines 55-60 discloses “Ideally, a 1-2 ms uninterrupted time period is required to properly service a PS/2 transfer. In addition, as host processors become faster, the period between FORCE-A20 commands shrinks, further shrinking the uninterrupted periods available to the keyboard controller to properly service PS/2 transfers. Col. 1, lines 40-59 also discloses that the PS/2

protocol has a controller to re-initiated data from the beginning) but fails to specifically teach that if the signal is a standard command, the signal would be sent to the pure hardware circuitry. Otherwise, the signal would be sent to the micro-controller unit.

However, in fig. 2, Falik discloses were two signals are being process within the firmware (micro-controller unit (102)), one being a standard command and the other being a data. Falik also discloses a pure hardware circuitry (105) and a micro-controller unit (102) working independently (see fig. 1).

In view of such teaching, at the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Falik's keyboard controller to process two signals, one being a standard command being process in the pure hardware circuitry and the other being a data being process in the firmware (micro-controller unit (102)).

The motivation for doing so would have been because Falik teaches that **separating the incoming signals reduce latency and overhead in handling these command/data, as disclosed (see col. 3, lines 44 and 45).**

Therefore, it would have been obvious to modify Falik for the benefit of creating a keyboard controller used to reduce latency and overhead in handling command/data to obtain the invention as specified in claim 6.

19. As per claim 7, Falik discloses a method for controlling a keyboard controller (100) comprising the steps of: returning the signal to the keyboard controller while a computer ordering a PS/2 controller to return the signal by the PS/2 controller(**col. 1,**

lines 40-59 discloses that the PS/2 protocol has a controller to re-initiated data from the beginning. col. 1, lines 40-59 discloses that the PS/2 protocol has a controller to re-initiated data from the beginning). and sending the signal to the command filtering circuitry for processing analysis (see fig. 1). Then, sending the signals to the host interface (107) (see fig. 1). The host interface receives the performed commands from the command of PS/2 controller for processing, and the keyboard controller connects with the computer host and the PS/2 controller for achieving a fast processing response (col. 1, lines 55-60 discloses “Ideally, a 1-2 ms uninterrupted time period is required to properly service a PS/2 transfer. In addition, as host processors become faster, the period between FORCE-A20 commands shrinks, further shrinking the uninterrupted periods available to the keyboard controller to properly service PS/2 transfers. Col. 1, lines 40-59 also discloses that the PS/2 protocol has a controller to re-initiated data from the beginning) but fails to specifically teach that if the signal is a standard command, the signal would be sent to the pure hardware circuitry. Otherwise, the signal would be sent to the micro-controller unit.

However, in fig. 2, Falik discloses were two signals are being process within the firmware (micro-controller unit (102)), one being a standard command and the other being a data. Falik also discloses a pure hardware circuitry (105) and a micro-controller unit (102) working independently (see fig. 1).

In view of such teaching, at the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Falik's keyboard controller to process

two signals, one being a standard command being process in the pure hardware circuitry and the other being a data being process in the firmware (micro-controller unit (102)).

The motivation for doing so would have been because Falik teaches that **separating the incoming signals reduce latency and overhead in handling these command/data, as disclosed (see col. 3, lines 44 and 45).**

Therefore, it would have been obvious to modify Falik for the benefit of creating a keyboard controller used to reduce latency and overhead in handling command/data to obtain the invention as specified in claim 7.

V. RELEVANT ART CITED BY THE EXAMINER

20. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See MPEP 707.05(c).
21. The following references teach a keyboard controller used to process command/data.

U.S. PATENT NUMBER

US 6,067,589
US 5,781,795

VI. CLOSING COMMENTS

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

22. The following is a summary of the treatment and status of all claims in the

application as recommended by **M.P.E.P. 707.07(i)**:

a (1) CLAIMS REJECTED IN THE APPLICATION

23. Per the instant office action, claims 1-7 have received a first action on the merits and are subject of a first action non-final.

b. DIRECTION OF FUTURE CORRESPONDENCES

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernest Unelus whose telephone number is (571) 272-8596. The examiner can normally be reached on Monday to Friday 9:00 AM to 5:00 PM.

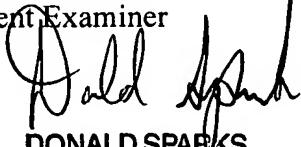
IMPORTANT NOTE

25. If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Donald Sparks, can be reached at the following telephone number: Area Code (571) 272-4201.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PMR system, see her//pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217- 91 97 (toll-free).

April 20, 2006

Ernest Unelus
Patent Examiner



DONALD SPARKS
SUPERVISORY PATENT EXAMINER